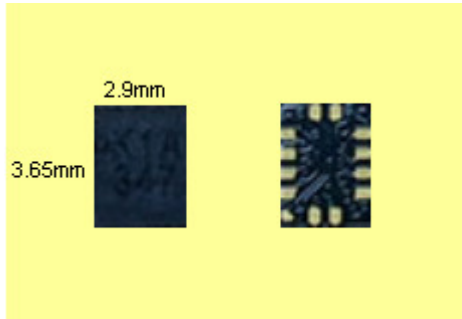




ITFK21B Touch Free Infrared Sensor

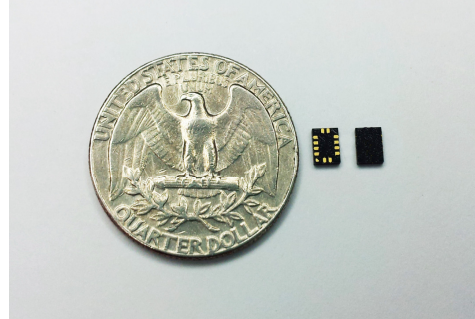
Pre-Release Information – Subject to change without notice



General Description

The ITFK21B is a System-In-Package (SiP) infrared (IR) sensor in a small 3.65mm by 2.9mm package. It employs a unique method to achieve high immunity against ambient interference. The device integrates an ASIC, a photodiode, and an IR-LED together. The 3 components are encapsulated by an IR-transparent epoxy. While the epoxy does not affect the sensor optical performance, it is opaque and giving the device the look of an IC. The on-board IR-LED allows the device to automatically tune itself against interference and reflections from the front glass or nearby devices. Our device is the best available option for IR sensing.

ITFK21B provides 3 LED drivers and operate from supply voltage of 2.2V to 3.6V. An internal regulator converts the supply voltage to 1.8V and all the circuitries are powered by it. Customers can reduce power consumption further by making use of the 4 available measurement modes. Characteristics of the LED drivers are also selectable. A special device addressing scheme is implemented to allow a single master to control up to 8 devices via the same serial interface. Our device provides the best freedom and flexibility for customers to design their applications that no others can meet.



Features

- High immunity against ambient interference
- Supply voltage range 2.2V – 3.6V
- Internal voltage regulator 1.8V operation
- 3 independent LED driving channels
- Programmable pulses, pulse frequency, and current level (100mA max.)
- Power-smart measurement modes: Fast / Slow / Automatic / Single-Shot
- Programmable sampling time
- Photodiode half angle of sensitivity: $\pm 60^\circ$
- I²C interface: Fast Mode (up to 400 kbit/s) or High-Speed Mode (up to 3.4 Mbit/s)
- Addressing scheme supports up to 8 devices on the same serial interface
- Small size package: 3.65mm X 2.9mm X 0.8mm
- -30°C to +85°C operating temperature

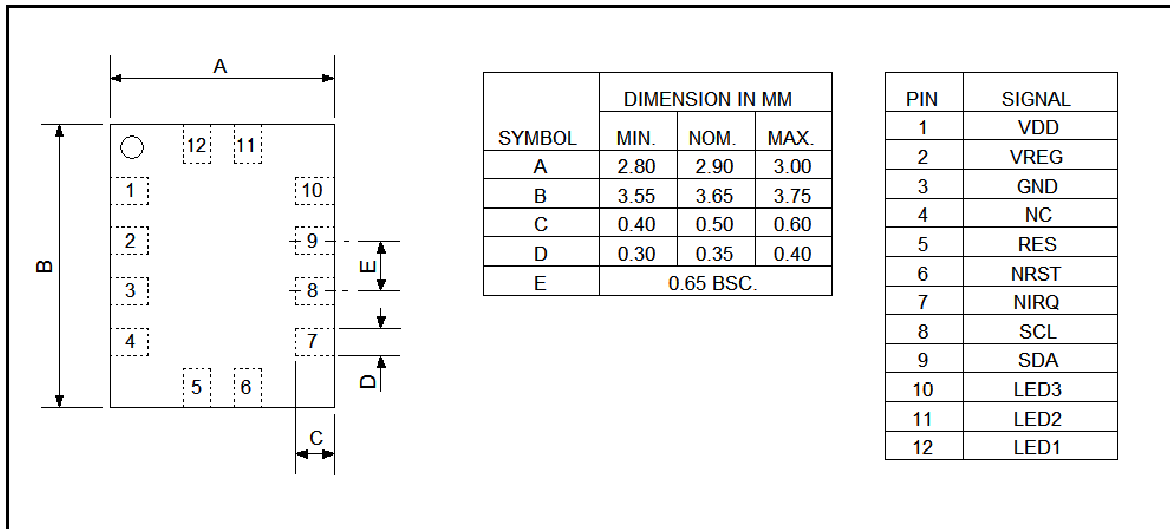
Applications

- 3D Hand Gesture Sensor
- 3D Mouse Sensor
- Programmable detection Proximity Sensor
- Wireless BT earphone Sensor
- Smart Watch Sensor
- Smart Detector Sensor





Package Outline & Pin Configuration



Simplified Application Diagram

